

## SEQUENCE LISTING

<110> Garvan Institute of Medical Research

<120> Methods of treatment of feeding disorders or disorders of glucose uptake and for modifying metabolism and identifying therapeutic reagents therefor

<130> 502008/MRO

<150> AU 2002953393

<151> 2002-12-16

<150> AU 2003906285

<151> 2003-11-14

<160> 261

<170> PatentIn version 3.1

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<212> PRT

<213> disrupted mouse Cbl

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Ser Leu Phe Lys Glu Gly Lys Glu Arg Met Tyr Glu Glu Asn Ser Gln  
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100 105 110

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 20 25 30

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 Phe Gln Pro His His His His His His Leu Ser Pro His Pro Pro  
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ggg acg gtg gac aag aag atg gtg gag aag tgc tgg aag ctc atg gac 192  
 Gly Thr Val Asp Lys Lys Met Val Glu Lys Cys Trp Lys Leu Met Asp  
 50 55 60

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Lys Val Val Arg Leu Cys Gln Asn Pro Lys Leu Ala Leu Lys Asn Ser  
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cca cct tat atc tta gac ctg cta cca gat acc tac cag cat ctc cgt 288  
 Pro Pro Tyr Ile Leu Asp Leu Leu Pro Asp Thr Tyr Gln His Leu Arg  
                  85                 90                 95

act atc ttg tca aga tat gag ggg aag atg gag aca ctt gga gaa aat 336  
 Thr Ile Leu Ser Arg Tyr Glu Gly Lys Met Glu Thr Leu Gly Glu Asn  
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gag tat ttt agg gtg ttt atg gag aat ttg atg aag aaa act aag caa      384  
 Glu Tyr Arg Val Phe Met Glu Asn Leu Met Lys Lys Thr Lys Gln  
   115                120...                125

acc ata agc ctc ttc aag gag gga aaa gaa aga atg tat gag gag aat . . . 432  
 Thr Ile Ser Leu Phe Lys Glu Gly Lys Glu Arg Met Tyr Glu Glu Asn  
 . . . 130 . . . 135 . . . 140

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 Ser Gln Pro Arg Arg Asn Leu Thr Lys Leu Ser Leu Ile Phe Ser His  
 145 150 155 160

gct ttt ggg gaa aag aca ata gtc cct tgg aag agc ttt cga cag gct 624  
 Ala Phe Gly Glu Lys Thr Ile Val Pro Trp Lys Ser Phe Arg Gln Ala  
           185       200       225

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Lys Ser Thr Ile Asp Leu Thr Cys Asn Asp Tyr Ile Ser Val Phe Glu		
225 230 235 240		
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Phe Asp Ile Phe Thr Arg Leu Phe Gln Pro Trp Ser Ser Leu Leu Arg		
245 250 255		
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Asn Trp Asn Ser Leu Ala Val Thr His Pro Gly Tyr Met Ala Phe Leu		
260 265 270		
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Thr Tyr Asp Glu Val Lys Ala Arg Leu Gln Lys Phe Ile His Lys Pro		
275 280 285		
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Gly Ser Tyr Ile Phe Arg Leu Ser Cys Thr Arg Leu Gly Gln Trp Ala		
290 295 300		
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Ile Glu Tyr Val Thr Ala Asp Gly Asn Ile Leu Gln Thr Ile Pro His		
305 310 315 320		
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Asn Lys Pro Leu Phe Gln Ala Leu Ile Asp Gly Phe Arg Glu Gly Phe		
325 330 335		
tat ttg ttt cct gat gga cga aat cag aat cct gat ctg act ggc tta		1056
Tyr Leu Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu		
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Cys Glu Pro Thr Pro Gln Asp His Ile Lys Val Thr Gln Glu Gln Tyr		
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Glu Leu Tyr Cys Glu Met Gly Ser Thr Phe Gln Leu Cys Lys Ile Cys		
370 375 380		
gct gaa aat gat aag gat gta aag att gag ccc tgt gga cac ctc atg		1200
Ala Glu Asn Asp Lys Asp Val Lys Ile Glu Pro Cys Gly His Leu Met		
385 390 395 400		
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Cys Thr Ser Cys Leu Thr Ser Trp Gln Glu Ser Glu Gly Gln Gly Cys		
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Pro Phe Cys Arg Cys Glu Ile Lys Gly Thr Glu Pro Ile Val Val Asp		
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Pro Phe Asp Pro Arg Gly Ser Gly Ser Leu Leu Arg Gln Gly Ala Glu		
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 Gln Arg Arg Pro Leu Pro Cys Thr Pro Gly Asp Cys Pro Ser Arg Asp  
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 aaa ctg ccc cct gtc ccc tct agc cgc ctt gga gac tca tgg ctg ccc 1776  
 Lys Leu Pro Pro Val Pro Ser Ser Arg Leu Gly Asp Ser Trp Leu Pro  
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 Arg Pro Ile Pro Lys Val Pro Val Ser Ala Pro Ser Ser Ser Asp Pro  
 595 600 605  
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705 710 715 720

2160

gat tgc gac cag cag att gat agc tgt acg tat gaa gca atg tat aat  
Asp Cys Asp Gln Gln Ile Asp Ser Cys Thr Tyr Glu Ala Met Tyr Asn  
725 730 735

2208

att cag tcc cag gcg cca tct atc acc gag agc agc acc ttt ggt gaa  
Ile Gln Ser Gln Ala Pro Ser Ile Thr Glu Ser Ser Thr Phe Gly Glu  
740 745 750

2256

ggg aat ttg gcc gca gcc cat gcc aac act ggt ccc gag gag tca gaa  
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755 760 765

2304

aat gag gat gat ggg tat gat gtc cca aag cca cct gtg ccg gcc gtg  
Asn Glu Asp Asp Gly Tyr Asp Val Pro Lys Pro Pro Val Pro Ala Val  
770 775 780

2352

ctg gcc cgc cga act ctc tca gat atc tct aat gcc agc tcc tcc ttt  
Leu Ala Arg Arg Thr Leu Ser Asp Ile Ser Asn Ala Ser Ser Ser Phe  
785 790 795 800

2400

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Gly Trp Leu Ser Leu Asp Gly Asp Pro Thr Thr Asn Val Thr Glu Gly  
805 810 815

2448

tcc caa gtt ccc gag agg cct cca aaa cca ttc ccg cgg aga atc aac  
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820 825 830

2496

tct gaa cgg aaa gct ggc agc tgt cag caa ggt agt ggt cct gcc gcc  
Ser Glu Arg Lys Ala Gly Ser Cys Gln Gln Gly Ser Gly Pro Ala Ala  
835 840 845

2544

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Ser Ala Ala Thr Ala Ser Pro Gln Leu Ser Ser Glu Ile Glu Asn Leu  
850 855 860

2592

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865 870 875 880

2640

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Ala Gln Asn Asn Ile Glu Met Ala Lys Asn Ile Leu Arg Glu Phe Val  
885 890 895

2688

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2721

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Phe Gln Pro His His His His His His Leu Ser Pro His Pro Pro  
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Gly Thr Val Asp Lys Lys Met Val Glu Lys Cys Trp Lys Leu Met Asp  
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Pro Pro Tyr Ile Leu Asp Leu Leu Pro Asp Thr Tyr Gln His Leu Arg  
 85              90              95

Thr Ile Leu Ser Arg Tyr Glu Gly Lys Met Glu Thr Leu Gly Glu Asn  
 100             105             110

Glu Tyr Phe Arg Val Phe Met Glu Asn Leu Met Lys Lys Thr Lys Gln  
 115             120             125

Thr Ile Ser Leu Phe Lys Glu Gly Lys Glu Arg Met Tyr Glu Glu Asn  
 130             135             140

Ser Gln Pro Arg Arg Asn Leu Thr Lys Leu Ser Leu Ile Phe Ser His  
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Met Leu Ala Glu Leu Lys Gly Ile Phe Pro Ser Gly Leu Phe Gln Gly  
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Asp Thr Phe Arg Ile Thr Lys Ala Asp Ala Ala Glu Phe Trp Arg Lys  
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Ala Phe Gly Glu Lys Thr Ile Val Pro Trp Lys Ser Phe Arg Gln Ala  
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Leu His Glu Val His Pro Ile Ser Ser Gly Leu Glu Ala Met Ala Leu  
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Phe Asp Ile Phe Thr Arg Leu Phe Gln Pro Trp Ser Ser Leu Leu Arg  
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Asn Trp Asn Ser Leu Ala Val Thr His Pro Gly Tyr Met Ala Phe Leu  
 260             265             270

Thr Tyr Asp Glu Val Lys Ala Arg Leu Gln Lys Phe Ile His Lys Pro  
 275             280             285

Gly Ser Tyr Ile Phe Arg Leu Ser Cys Thr Arg Leu Gly Gln Trp Ala

290

295

300

Ile Glu Tyr Val Thr Ala Asp Gly Asn Ile Leu Gln Thr Ile Pro His  
305               310               315               320

Asn Lys Pro Leu Phe Gln Ala Leu Ile Asp Gly Phe Arg Glu Gly Phe  
325               330               335

Tyr Leu Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu  
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Cys Glu Pro Thr Pro Gln Asp His Ile Lys Val Thr Gln Glu Gln Tyr  
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Glu Leu Tyr Cys Glu Met Gly Ser Thr Phe Gln Leu Cys Lys Ile Cys  
370               375               380

Ala Glu Asn Asp Lys Asp Val Lys Ile Glu Pro Cys Gly His Leu Met  
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Cys Thr Ser Cys Leu Thr Ser Trp Gln Glu Ser Glu Gly Gln Gly Cys  
405               410               415

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Pro Phe Asp Pro Arg Gly Ser Gly Ser Leu Leu Arg Gln Gly Ala Glu  
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Gly Ala Pro Ser Pro Asn Tyr Asp Asp Asp Asp Glu Arg Ala Asp  
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Lys Asp Lys Pro Leu Pro Val Pro Pro Thr Leu Arg Asp Leu Pro Pro  
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Pro Pro Pro Pro Asp Arg Pro Tyr Ser Val Gly Ala Glu Ser Arg Pro  
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Gln Arg Arg Pro Leu Pro Cys Thr Pro Gly Asp Cys Pro Ser Arg Asp  
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Arg Pro Ile Pro Lys Val Pro Val Ser Ala Pro Ser Ser Ser Asp Pro  
595               600               605

Trp Thr Gly Arg Glu Leu Thr Asn Arg His Ser Leu Pro Phe Ser Leu  
610               615               620

Pro Ser Gln Met Glu Pro Arg Pro Asp Val Pro Arg Leu Gly Ser Thr  
625 630 635 640

Phe Ser Leu Asp Thr Ser Met Ser Met Asn Ser Ser Pro Leu Val Gly  
645 650 655

Pro Glu Cys Asp His Pro Lys Ile Lys Pro Ser Ser Ser Ala Asn Ala  
660 665 670

Ile Tyr Ser Leu Ala Ala Arg Pro Leu Pro Val Pro Lys Leu Pro Pro  
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Gly Glu Gln Cys Glu Gly Glu Glu Asp Thr Glu Tyr Met Thr Pro Ser  
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Ser Arg Pro Leu Arg Pro Leu Asp Thr Ser Gln Ser Ser Arg Ala Cys  
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Asp Cys Asp Gln Gln Ile Asp Ser Cys Thr Tyr Glu Ala Met Tyr Asn  
725 730 735

Ile Gln Ser Gln Ala Pro Ser Ile Thr Glu Ser Ser Thr Phe Gly Glu  
740 745 750

Gly Asn Leu Ala Ala Ala His Ala Asn Thr Gly Pro Glu Glu Ser Glu  
755 760 765

Asn Glu Asp Asp Gly Tyr Asp Val Pro Lys Pro Pro Val Pro Ala Val  
770 775 780

Leu Ala Arg Arg Thr Leu Ser Asp Ile Ser Asn Ala Ser Ser Ser Phe  
785 790 795 800

Gly Trp Leu Ser Leu Asp Gly Asp Pro Thr Thr Asn Val Thr Glu Gly  
805 810 815

Ser Gln Val Pro Glu Arg Pro Pro Lys Pro Phe Pro Arg Arg Ile Asn  
820 825 830

Ser Glu Arg Lys Ala Gly Ser Cys Gln Gln Gly Ser Gly Pro Ala Ala  
835 840 845

Ser Ala Ala Thr Ala Ser Pro Gln Leu Ser Ser Glu Ile Glu Asn Leu  
850 855 860

Met Ser Gln Gly Tyr Ser Tyr Gln Asp Ile Gln Lys Ala Leu Val Ile  
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tcc	ggg	ggc	tcg	ggt	tcg	ggt	ggc	ctg	att	ggg	ctc	atg	aag	gac	gcc		96
Ser	Gly	Gly	Ser	Gly	Ser	Gly	Gly	Leu	Ile	Gly	Ile	Met	Lys	Asp	Ala		
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Phe	Gln	Pro	His	Leu	Ser	Pro	His	Pro	Pro								
35				40						45							

ggg	acg	gtg	gac	aag	aag	atg	gtg	gag	aag	tgc	tgg	aag	ctc	atg	gac		192
Gly	Thr	Val	Asp	Lys	Lys	Met	Val	Glu	Lys	Cys	Trp	Lys	Leu	Met	Asp		
50				55						60							

aag	gtg	gtg	cg	ttg	tgt	cag	aac	cca	aag	ctg	g	ct	a	ag	aat	agc	240
Lys	Val	Val	Arg	Leu	Cys	Gln	Asn	Pro	Lys	Leu	A	la	Leu	Lys	Asn	Ser	
65				70						75			80				

cca	cct	tat	atc	tta	gac	ctg	cta	cca	gat	acc	ta	cag	cat	ctc	cgt		288
Pro	Pro	Tyr	Ile	Leu	Asp	Leu	Leu	Pro	Asp	Thr	Tyr	Gln	His	Leu	Arg		
85				90						95							

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Thr	Ile	Leu	Ser	Arg	Tyr	Glu	Gly	Lys	Met	Glu	Thr	Leu	Gly	Glu	Asn		
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Met	Leu	Ala	Glu	Leu	Lys	Gly	Ile	Phe	Pro	Ser	Gly	Leu	Phe	Gln	Gly		
165				170						175							

gac	aca	ttt	cg	att	act	aaa	gca	gat	gct	g	g	aa	ttt	tgg	aga	aaa	576
Asp	Thr	Phe	Arg	Ile	Thr	Lys	Ala	Asp	Ala	Ala	Glu	Phe	Trp	Arg	Lys		

180	185	190	
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gat act ctc ttc atg atg aag gaa ttg gct ggt gcc aag gtg gaa cgg Asp Thr Leu Phe Met Met Lys Glu Leu Ala Gly Ala Lys Val Glu Arg 465 470 475 480	1440
ccg cct tct cca ttc tcc atg gcc cca caa gct tcc ctt ccc ccg gtg Pro Pro Ser Pro Phe Ser Met Ala Pro Gln Ala Ser Leu Pro Pro Val 485 490 495	1488
cca cca cga ctt gac ctt ctg ccg cag cga gta tgt gtt ccc tca agt Pro Pro Arg Leu Asp Leu Leu Pro Gln Arg Val Cys Val Pro Ser Ser 500 505 510	1536
gct tct gct ctt gga act gct tct aag gct gct tct ggc tcc ctt cat Ala Ser Ala Leu Gly Thr Ala Ser Lys Ala Ala Ser Gly Ser Leu His 515 520 525	1584
aaa gac aaa cca ttg cca gta cct ccc aca ctt cga gat ctt cca cca Lys Asp Lys Pro Leu Pro Val Pro Pro Thr Leu Arg Asp Leu Pro Pro 530 535 540	1632
cca ccg cct cca gac ccg cca tat tct gtt gga gca gaa tcc cga cct Pro Pro Pro Pro Asp Arg Pro Tyr Ser Val Gly Ala Glu Ser Arg Pro 545 550 555 560	1680
caa aga cgc ccc ttg cct tgt aca cca ggc gac tgt ccc tcc aga gac Gln Arg Arg Pro Leu Pro Cys Thr Pro Gly Asp Cys Pro Ser Arg Asp 565 570 575	1728
aaa ctg ccc cct gtc ccc tct agc cgc ctt gga gac tca tgg ctg ccc Lys Leu Pro Pro Val Pro Ser Ser Arg Leu Gly Asp Ser Trp Leu Pro 580 585 590	1776
cg <sup>g</sup> cca atc ccc aaa gta cca gta tct gcc cca agt tcc agt gat ccc Arg Pro Ile Pro Lys Val Pro Val Ser Ala Pro Ser Ser Asp Pro 595 600 605	1824
tgg aca gga aga gaa tta acc aac ccg cac tca ctt cca ttt tca ttg Trp Thr Gly Arg Glu Leu Thr Asn Arg His Ser Leu Pro Phe Ser Leu 610 615 620	1872
ccc tca caa atg gag ccc aga cca gat gtg cct agg ctc gga agc acg Pro Ser Gln Met Glu Pro Arg Pro Asp Val Pro Arg Leu Gly Ser Thr 625 630 635 640	1920
ttc agt ctg gat acc tcc atg agt atg aat agc agc cca tta gta ggt Phe Ser Leu Asp Thr Ser Met Ser Met Asn Ser Ser Pro Leu Val Gly 645 650 655	1968
cca gag tgt gac cac ccc aaa atc aaa cct tcc tca tct gcc aat gcc Pro Glu Cys Asp His Pro Lys Ile Lys Pro Ser Ser Ala Asn Ala 660 665 670	2016

att tat tct ctg gct gcc aga cct ctt cct gtg cca aaa ctg cca cct Ile Tyr Ser Leu Ala Ala Arg Pro Leu Pro Val Pro Lys Leu Pro Pro 675 680 685	2064
ggg gag caa tgt gag ggt gaa gag gac aca gag tac atg act ccc tct Gly Glu Gln Cys Glu Gly Glu Glu Asp Thr Glu Tyr Met Thr Pro Ser 690 695 700	2112
tcc agg cct cta cgg cct ttg gat aca tcc cag agt tca cga gca tgt Ser Arg Pro Leu Arg Pro Leu Asp Thr Ser Gln Ser Ser Arg Ala Cys 705 710 715 720	2160
gat tgc gac cag cag att gat agc tgt acg tat gaa gca atg tat aat Asp Cys Asp Gln Gln Ile Asp Ser Cys Thr Tyr Glu Ala Met Tyr Asn 725 730 735	2208
att cag tcc cag gcg cca tct atc acc gag agc agc acc ttt ggt gaa Ile Gln Ser Gln Ala Pro Ser Ile Thr Glu Ser Ser Thr Phe Gly Glu 740 745 750	2256
ggg aat ttg gcc gca gcc cat gcc aac act ggt ccc gag gag tca gaa Gly Asn Leu Ala Ala His Ala Asn Thr Gly Pro Glu Glu Ser Glu 755 760 765	2304
aat gag gat gat ggg tat gat gtc cca aag cca cct gtg ccg gcc gtg Asn Glu Asp Asp Gly Tyr Asp Val Pro Lys Pro Pro Val Pro Ala Val 770 775 780	2352
ctg gcc cgc cga act ctc tca gat atc tct aat gcc agc tcc tcc ttt Leu Ala Arg Arg Thr Leu Ser Asp Ile Ser Asp Ala Ser Ser Ser Phe 785 790 795 800	2400
ggc tgg ttg tct ctg gat ggt gat cct aca aca aat gtc act gaa ggt Gly Trp Leu Ser Leu Asp Gly Asp Pro Thr Thr Asn Val Thr Glu Gly 805 810 815	2448
tcc caa gtt ccc gag agg cct cca aaa cca ttc ccg cgg aga atc aac Ser Gln Val Pro Glu Arg Pro Pro Lys Pro Phe Pro Arg Arg Ile Asn 820 825 830	2496
tct gaa cgg aaa gct ggc agc tgt cag caa ggt agt ggt cct gcc gcc Ser Glu Arg Lys Ala Gly Ser Cys Gln Gln Gly Ser Gly Pro Ala Ala 835 840 845	2544
tct gct gcc acc gcc tca cct cag ctc tcc agt gag atc gag aac ctc Ser Ala Ala Thr Ala Ser Pro Gln Leu Ser Ser Glu Ile Glu Asn Leu 850 855 860	2592
atg agt cag ggg tac tcc tac cag gac atc cag aaa gct ttg gtc att Met Ser Gln Gly Tyr Ser Tyr Gln Asp Ile Gln Lys Ala Leu Val Ile 865 870 875 880	2640
gcc cag aac aac atc gag atg gcc aaa aac atc ctc ccg gaa ttt gtt Ala Gln Asn Asn Ile Glu Met Ala Lys Asn Ile Leu Arg Glu Phe Val 885 890 895	2688
tcc att tct tct cct gcc cat gta gct acc tag Ser Ile Ser Ser Pro Ala His Val Ala Thr 900 905	2721

&lt;210&gt; 250

&lt;211&gt; 906

&lt;212&gt; PRT

&lt;213&gt; c-Cbl C381A

&lt;400&gt; 250

Met Ala Gly Asn Val Lys Lys Ser Ser Gly Ala Gly Gly Thr Gly  
1 5 10 15

Ser Gly Gly Ser Gly Ser Gly Gly Leu Ile Gly Leu Met Lys Asp Ala  
20 25 30

Phe Gln Pro His His His His His His Leu Ser Pro His Pro Pro  
35 40 45

Gly Thr Val Asp Lys Lys Met Val Glu Lys Cys Trp Lys Leu Met Asp  
50 55 60

Lys Val Val Arg Leu Cys Gln Asn Pro Lys Leu Ala Leu Lys Asn Ser  
65 70 75 80

Pro Pro Tyr Ile Leu Asp Leu Leu Pro Asp Thr Tyr Gln His Leu Arg  
85 90 95

Thr Ile Leu Ser Arg Tyr Glu Gly Lys Met Glu Thr Leu Gly Glu Asn  
100 105 110

Glu Tyr Phe Arg Val Phe Met Glu Asn Leu Met Lys Lys Thr Lys Gln  
115 120 125

Thr Ile Ser Leu Phe Lys Glu Gly Lys Glu Arg Met Tyr Glu Glu Asn  
130 135 140

Ser Gln Pro Arg Arg Asn Leu Thr Lys Leu Ser Leu Ile Phe Ser His  
145 150 155 160

Met Leu Ala Glu Leu Lys Gly Ile Phe Pro Ser Gly Leu Phe Gln Gly  
165 170 175

Asp Thr Phe Arg Ile Thr Lys Ala Asp Ala Ala Glu Phe Trp Arg Lys  
180 185 190

Ala Phe Gly Glu Lys Thr Ile Val Pro Trp Lys Ser Phe Arg Gln Ala  
195 200 205

Leu His Glu Val His Pro Ile Ser Ser Gly Leu Glu Ala Met Ala Leu  
210 215 220

Lys Ser Thr Ile Asp Leu Thr Cys Asn Asp Tyr Ile Ser Val Phe Glu  
225 230 235 240

Phe Asp Ile Phe Thr Arg Leu Phe Gln Pro Trp Ser Ser Leu Leu Arg  
245 250 255

Asn Trp Asn Ser Leu Ala Val Thr His Pro Gly Tyr Met Ala Phe Leu  
260 265 270

Thr Tyr Asp Glu Val Lys Ala Arg Leu Gln Lys Phe Ile His Lys Pro  
275 280 285

Gly Ser Tyr Ile Phe Arg Leu Ser Cys Thr Arg Leu Gly Gln Trp Ala  
290 295 300

Ile Gly Tyr Val Thr Ala Asp Gly Asn Ile Leu Gln Thr Ile Pro His  
305 310 315 320

Asn Lys Pro Leu Phe Gln Ala Leu Ile Asp Gly Phe Arg Glu Gly Phe  
325 330 335

Tyr Leu Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu  
340 345 350

Cys Glu Pro Thr Pro Gln Asp His Ile Lys Val Thr Gln Glu Gln Tyr  
355 360 365

Glu Leu Tyr Cys Glu Met Gly Ser Thr Phe Gln Leu Ala Lys Ile Cys  
370 375 380

Ala Glu Asn Asp Lys Asp Val Lys Ile Glu Pro Cys Gly His Leu Met  
385 390 395 400

Cys Thr Ser Cys Leu Thr Ser Trp Gln Glu Ser Gly Gln Gly Cys  
405 410 415

Pro Phe Cys Arg Cys Glu Ile Lys Gly Thr Glu Pro Ile Val Val Asp  
420 425 430

Pro Phe Asp Pro Arg Gly Ser Gly Ser Leu Leu Arg Gln Gly Ala Glu  
435 440 445

Gly Ala Pro Ser Pro Asn Tyr Asp Asp Asp Asp Glu Arg Ala Asp  
450 455 460

Asp Thr Leu Phe Met Met Lys Glu Leu Ala Gly Ala Lys Val Glu Arg  
465 470 475 480

Pro Pro Ser Pro Phe Ser Met Ala Pro Gln Ala Ser Leu Pro Pro Val  
485 490 495

Pro Pro Arg Leu Asp Leu Leu Pro Gln Arg Val Cys Val Pro Ser Ser  
500 505 510

Ala Ser Ala Leu Gly Thr Ala Ser Lys Ala Ala Ser Gly Ser Leu His  
515 520 525

Lys Asp Lys Pro Leu Pro Val Pro Thr Leu Arg Asp Leu Pro Pro  
530 535 540

Pro Pro Pro Pro Asp Arg Pro Tyr Ser Val Gly Ala Glu Ser Arg Pro  
545 550 555 560

Gln Arg Arg Pro Leu Pro Cys Thr Pro Gly Asp Cys Pro Ser Arg Asp  
565 570 575

Lys Leu Pro Pro Val Pro Ser Ser Arg Leu Gly Asp Ser Trp Leu Pro

580	585	590
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Arg Pro Ile Pro Lys Val Pro Val Ser Ala Pro Ser Ser Ser Asp Pro	595	600
		605

Trp Thr Gly Arg Glu Leu Thr Asn Arg His Ser Leu Pro Phe Ser Leu	610	615
		620

Pro Ser Gln Met Glu Pro Arg Pro Asp Val Pro Arg Leu Gly Ser Thr	625	630
		635
		640

Phe Ser Leu Asp Thr Ser Met Ser Met Asn Ser Ser Pro Leu Val Gly	645	650
		655

Pro Glu Cys Asp His Pro Lys Ile Lys Pro Ser Ser Ser Ala Asn Ala	660	665
		670

Ile Tyr Ser Leu Ala Ala Arg Pro Leu Pro Val Pro Lys Leu Pro Pro	675	680
		685

Gly Glu Gln Cys Glu Gly Glu Glu Asp Thr Glu Tyr Met Thr Pro Ser	690	695
		700

Ser Arg Pro Leu Arg Pro Leu Asp Thr Ser Gln Ser Ser Arg Ala Cys	705	710
		715
		720

Asp Cys Asp Gln Gln Ile Asp Ser Cys Thr Tyr Glu Ala Met Tyr Asn	725	730
		735

Ile Gln Ser Gln Ala Pro Ser Ile Thr Glu Ser Ser Thr Phe Gly Glu	740	745
		750

Gly Asn Leu Ala Ala Ala His Ala Asn Thr Gly Pro Glu Glu Ser Glu	755	760
		765

Asn Glu Asp Asp Gly Tyr Asp Val Pro Lys Pro Pro Val Pro Ala Val	770	775
		780

Leu Ala Arg Arg Thr Leu Ser Asp Ile Ser Asn Ala Ser Ser Ser Phe	785	790
		795
		800

Gly Trp Leu Ser Leu Asp Gly Asp Pro Thr Thr Asn Val Thr Glu Gly	805	810
		815

Ser Gln Val Pro Glu Arg Pro Pro Lys Pro Phe Pro Arg Arg Ile Asn	820	825
		830

Ser Glu Arg Lys Ala Gly Ser Cys Gln Gln Gly Ser Gly Pro Ala Ala	835	840
		845

Ser Ala Ala Thr Ala Ser Pro Gln Leu Ser Ser Glu Ile Glu Asn Leu	850	855
		860

Met Ser Gln Gly Tyr Ser Tyr Gln Asp Ile Gln Lys Ala Leu Val Ile	865	870
		875
		880

Ala Gln Asn Asn Ile Glu Met Ala Lys Asn Ile Leu Arg Glu Phe Val	885	890
		895

Ser Ile Ser Ser Pro Ala His Val Ala Thr		
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900

905

&lt;210&gt; 251

&lt;211&gt; 2721

&lt;212&gt; DNA

&lt;213&gt; c-Cbl Y700F

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(2718)

&lt;223&gt;

&lt;400&gt; 251

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Met	Ala	Gly	Asn	Val	Lys	Lys	Ser	Ser	Gly	Ala	Gly	Gly	Gly	Thr	Gly		
1	.	.	.	5	.	.	.	10	.	.	.	15	.	.	.		

tcc	ggg	ggc	tcg	ggt	tcg	ggt	ggc	ctg	att	ggg	ctc	atg	aag	gac	gcc		96
Ser	Gly	Gly	Ser	Gly	Ser	Gly	Gly	Leu	Ile	Gly	Leu	Met	Lys	Asp	Ala		
20	.	.	25	.	.	30	.	.	.	.	.	.	.	.	.		

ttc	cag	ccg	cac	cac	cac	cac	cac	ctc	agc	ccc	cac	ccg	ccg		144	
Phe	Gln	Pro	His	His	His	His	His	His	Leu	Ser	Pro	His	Pro	Pro		
35	.	.	40	.	.	45	.	.	.	.	.	.	.	.		

ggg	acg	gtg	gac	aag	aag	atg	gtg	gag	aag	tgc	tgg	aag	ctc	atg	gac		192
Gly	Thr	Val	Asp	Lys	Lys	Met	Val	Glu	Lys	Cys	Trp	Lys	Leu	Met	Asp		
50	.	.	55	.	.	60	.	.	.	.	.	.	.	.	.		

aag	gtg	gtg	cg	ttg	tgt	cag	aac	cca	aag	ctg	g	cta	aag	aat	agc		240
Lys	Val	Val	Arg	Leu	Cys	Gln	Asn	Pro	Lys	Leu	Ala	Leu	Lys	Asn	Ser		
65	.	.	70	.	.	75	.	90	.	75	.	80	.	.	.		

cca	cct	tat	atc	tta	gac	ctg	cta	cca	gat	acc	tac	cag	cat	ctc	cgt		288
Pro	Pro	Tyr	Ile	Leu	Asp	Leu	Pro	Asp	Thr	Tyr	Gln	His	Leu	Arg			
85	.	.	90	.	.	95	.	.	.	.	.	.	.	.			

act	atc	ttg	tca	aga	tat	gag	ggg	aag	atg	gag	aca	ctt	gga	gaa	aat		336
Thr	Ile	Leu	Ser	Arg	Tyr	Glu	Gly	Lys	Mét	Glu	Thr	Leu	Gly	Glu	Asn		
100	.	.	105	.	.	110	.	.	.	.	.	.	.	.	.		

gag	tat	ttt	agg	gtg	ttt	atg	gag	aat	ttg	atg	aag	aaa	act	aag	caa		384
Glu	Tyr	Phe	Arg	Val	Phe	Met	Glu	Asn	Leu	Met	Lys	Lys	Thr	Lys	Gln		
115	.	.	120	.	.	125	.	.	.	.	.	.	.	.	.		

acc	ata	agc	ctc	ttc	aag	gag	gga	aaa	gaa	aga	atg	tat	gag	gag	aat		432
Thr	Ile	Ser	Leu	Phe	Lys	Glu	Gly	Lys	Glu	Arg	Met	Tyr	Glu	Glu	Asn		
130	.	.	135	.	.	140	.	.	.	.	.	.	.	.	.		

tct	cag	cct	agg	cga	aac	cta	acc	aaa	ctg	tcc	ctc	atc	ttc	agc	cac		480
Ser	Gln	Pro	Arg	Arg	Asn	Leu	Thr	Lys	Leu	Ser	Leu	Ile	Phe	Ser	His		

145	150	155	160	
atg ctg gca gaa cta aaa gga atc ttt cca agt gga ctc ttt cag gga Met Leu Ala Glu Leu Lys Gly Ile Phe Pro Ser Gly Leu Phe Gln Gly				528
165		170	175	
gac aca ttt cgg att act aaa gca gat gct gcg gaa ttt tgg aga aaa Asp Thr Phe Arg Ile Thr Lys Ala Asp Ala Ala Glu Phe Trp Arg Lys				576
180		185	190	
gct ttt ggg gaa aag aca ata gtc cct tgg aag agc ttt cga cag gct Ala Phe Gly Glu Lys Thr Ile Val Pro Trp Lys Ser Phe Arg Gln Ala				624
195	200	205		
cta cat gaa gtg cat ccc atc agt tct ggg ctg gag gcc atg gct ctg Leu His Glu Val His Pro Ile Ser Ser Gly Leu Glu Ala Met Ala Leu				672
210	215	220		
aaa tcc act att gat ctg acc tgc aat gat tat att tcg gtt ttt gaa Lys Ser Thr Ile Asp Leu Thr Cys Asn Asp Tyr Ile Ser Val Phe Glu				720
225	230	235	240	
ttt gac atc ttt acc cga ctc ttt cag ccc tgg tcc tct ttg ctc agg Phe Asp Ile Phe Thr Arg Leu Phe Gln Pro Trp Ser Ser Leu Leu Arg				768
245		250	255	
aat tgg aac agc ctt gct gta act cat cct ggc tac atg gct ttt ttg Asn Trp Asn Ser Leu Ala Val Thr His Pro Gly Tyr Met Ala Phe Leu				816
260		265	270	
acg tat gac gaa gtg aaa gct cgg ctc cag aaa ttc att cac aaa cct Thr Tyr Asp Glu Val Lys Ala Arg Leu Gln Lys Phe Ile His Lys Pro				864
275		280	285	
ggc agt tat atc ttc cgg ctg agc tgt act cgt ctg ggt cag tgg gct Gly Ser Tyr Ile Phe Arg Leu Ser Cys Thr Arg Leu Gly Gln Trp Ala				912
290		295	300	
att ggg tat gtt act gct gat ggg aac att ctc cag aca atc cct cac Ile Gly Tyr Val Thr Ala Asp Gly Asn Ile Leu Gln Thr Ile Pro His				960
305	310	315	320	
aat aaa cct ctc ttc caa gca ctg att gat ggc ttc agg gaa ggc ttc Asn Lys Pro Leu Phe Gln Ala Leu Ile Asp Gly Phe Arg Glu Gly Phe				1008
325		330	335	
tat ttg ttt cct gat gga cga aat cag aat cct gat ctg act ggc tta Tyr Leu Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu				1056
340		345	350	
tgt gaa cca act ccc caa gac cat atc aaa gtg acc cag gaa caa tat Cys Glu Pro Thr Pro Gln Asp His Ile Lys Val Thr Gln Glu Gln Tyr				1104
355		360	365	
gaa tta tac tgt gag atg ggc tcc aca ttc caa cta tgt aaa ata tgt Glu Leu Tyr Cys Glu Met Gly Ser Thr Phe Gln Leu Cys Lys Ile Cys				1152
370	375	380		
gct gaa aat gat aag gat gta aag att gag ccc tgt gga cac ctc atg Ala Glu Asn Asp Lys Asp Val Lys Ile Glu Pro Cys Gly His Leu Met				1200
385	390	395	400	

tgc aca tcc tgt ctt aca tcc tgg cag gaa tca gaa ggt cag ggc tgt Cys Thr Ser Cys Leu Thr Ser Trp Gln Glu Ser Glu Gly Gln Gly Cys 405 410 415	1248
cct ttc tgc cga tgt gaa att aaa ggt act gaa ccc atc gtg gta gat Pro Phe Cys Arg Cys Glu Ile Lys Gly Thr Glu Pro Ile Val Val Asp 420 425 430	1296
ccg ttt gat cct aga ggg agt ggc agc ctg ttg agg caa gga gca gag Pro Phe Asp Pro Arg Gly Ser Gly Ser Leu Leu Arg Gln Gly Ala Glu 435 440 445	1344
gga gct ccc tcc cca aat tat gat gat gat gat gaa cga gct gat Gly Ala Pro Ser Pro Asn Tyr Asp Asp Asp Asp Asp Glu Arg Ala Asp 450 455 460	1392
gat act ctc ttc atg atg aag gaa ttg gct ggt gcc aag gtg gaa cgg Asp Thr Leu Phe Met Met Lys Glu Leu Ala Gly Ala Lys Val Glu Arg 465 470 475 480	1440
ccg cct tct cca ttc tcc atg gcc cca caa gct tcc ctt ccc ccg gtg Pro Pro Ser Pro Phe Ser Met Ala Pro Gln Ala Ser Leu Pro Pro Val 485 490 495	1488
cca cca cga ctt gac ctt ctg ccg cag cga gta tgt gtt ccc tca agt Pro Pro Arg Leu Asp Leu Leu Pro Gln Arg Val Cys Val Pro Ser Ser 500 505 510	1536
gct tct gct ctt gga act gct tct aag gct gct tct ggc tcc ctt cat Ala Ser Ala Leu Gly Thr Ala Ser Lys Ala Ala Ser Gly Ser Leu His 515 520 525	1584
aaa gac aaa cca ttg cca gta cct ccc aca ctt cga gat ctt cca cca Lys Asp Lys Pro Leu Pro Val Pro Pro Thr Leu Arg Asp Leu Pro Pro 530 535 540	1632
cca ccg cct cca gac cgg cca tat tct gtt gga gca gaa tcc cga cct Pro Pro Pro Pro Asp Arg Pro Tyr Ser Val Gly Ala Glu Ser Arg Pro 545 550 555 560	1680
caa aga cgc ccc ttg cct tgt aca cca ggc gac tgt ccc tcc aga gac Gln Arg Arg Pro Leu Pro Cys Thr Pro Gly Asp Cys Pro Ser Arg Asp 565 570 575	1728
aaa ctg ccc cct gtc ccc tct agc cgc ctt gga gac tca tgg ctg ccc Lys Leu Pro Pro Val Pro Ser Ser Arg Leu Gly Asp Ser Trp Leu Pro 580 585 590	1776
cgg cca atc ccc aaa gta cca gta tct gcc cca agt tcc agt gat ccc Arg Pro Ile Pro Lys Val Pro Val Ser Ala Pro Ser Ser Ser Asp Pro 595 600 605	1824
tgg aca gga aga gaa tta acc aac cgg cac tca ctt cca ttt tca ttg Trp Thr Gly Arg Glu Leu Thr Asn Arg His Ser Leu Pro Phe Ser Leu 610 615 620	1872
ccc tca caa atg gag ccc aca gat gtg cct agg ctc gga agc acg Pro Ser Gln Met Glu Pro Arg Pro Asp Val Pro Arg Leu Gly Ser Thr 625 630 635 640	1920

ttc agt ctg gat acc tcc atg agt atg aat agc agc cca tta gta ggt Phe Ser Leu Asp Thr Ser Met Ser Met Asn Ser Ser Pro Leu Val Gly 645 650 655	1968
cca gag tgt gac cac ccc aaa atc aaa cct tcc tca tct gcc aat gcc Pro Glu Cys Asp His Pro Lys Ile Lys Pro Ser Ser Ala Asn Ala 660 665 670	2016
att tat tct ctg gct gcc aga cct ctt cct gtg cca aaa ctg cca cct Ile Tyr Ser Leu Ala Ala Arg Pro Leu Pro Val Pro Lys Ile Pro Pro 675 680 685	2064
ggg gag caa tgt gag ggt gaa gag gag aca gag ttc atg act ccc tct Gly Glu Gln Cys Glu Gly Glu Asp Thr Glu Phe Met Thr Pro Ser 690 695 700	2112
tcc agg cct cta cgg cct ttg gat aca tcc cag agt tca cga gca tgt Ser Arg Pro Leu Arg Pro Leu Asp Thr Ser Gln Ser Ser Arg Ala Cys 705 710 715 720	2160
gat tgc gac cag cag att gat agc tgt acg tat gaa gca atg tat aat Asp Cys Asp Gln Gln Ile Asp Ser Cys Thr Tyr Glu Ala Met Tyr Asn 725 730 735	2208
att cag tcc cag gcg cca tct atc acc gag agc agc acc ttt ggt gaa Ile Gln Ser Gln Ala Pro Ser Ile Thr Glu Ser Ser Thr Phe Gly Glu 740 745 750	2256
ggg aat ttg gcc gca gcc cat gcc aac act ggt ccc gag gag tca gaa Gly Asn Leu Ala Ala Ala His Ala Asn Thr Gly Pro Glu Ser Glu 755 760 765	2304
aat gag gat gat ggg tat gat gtc cca aag cca cct gtg ccg gcc gtg Asn Glu Asp Asp Gly Tyr Asp Val Pro Lys Pro Pro Val Pro Ala Val 770 775 780	2352
ctg gcc cgc cga act ctc tca gat atc tct aat gcc agc tcc tcc ttt Leu Ala Arg Arg Thr Leu Ser Asp Ile Ser Asn Ala Ser Ser Ser Phe 785 790 795 800	2400
ggc tgg ttg tct ctg gat ggt gat cct aca aca aat gtc act gaa ggt Gly Trp Leu Ser Leu Asp Gly Asp Pro Thr Thr Asn Val Thr Glu Gly 805 810 815	2448
tcc caa gtt ccc gag agg cct cca aaa cca ttc ccg cgg aga atc aac Ser Gln Val Pro Glu Arg Pro Pro Lys Pro Phe Pro Arg Arg Ile Asn 820 825 830	2496
tct gaa cgg aaa gct ggc agc tgt cag caa ggt agt ggt cct gcc gcc Ser Glu Arg Lys Ala Gly Ser Cys Gln Gln Gly Ser Gly Pro Ala Ala 835 840 845	2544
tct gct gcc acc goc tca cct cag ctc tcc agt gag atc gag aac ctc Ser Ala Ala Thr Ala Ser Pro Gln Leu Ser Ser Glu Ile Glu Asn Leu 850 855 860	2592
atg agt cag ggg tac tcc tac cag gac atc cag aaa gct ttg gtc att Met Ser Gln Gly Tyr Ser Tyr Gln Asp Ile Gln Lys Ala Leu Val Ile 865 870 875 880	2640
gcc cag aac aac atc gag atg gcc aaa aac atc ctc cgg gaa ttt gtt	2688

Ala Gln Asn Asn Ile Glu Met Ala Lys Asn Ile Leu Arg Glu Phe Val  
885 890 895

tcc att tct tct cct gcc cat gta gct acc tag 2721  
Ser Ile Ser Ser Pro Ala His Val Ala Thr  
900 905

252

<211> 906

<212> PRT

<213> c-Cbl Y700F

<400> 252

Met Ala Gly Asn Val Lys Lys Ser Ser Gly Ala Gly Gly Gly Thr Gly  
1 5 10 15

Gly Thr Val Asp Lys Lys Met Val Glu Lys Cys Trp Lys Leu Met Asp  
50 55 60

Lys Val Val Arg Leu Cys Gln Asn Pro Lys Leu Ala Leu Lys Asn Ser  
65 . . . . 70 . . . . 75 . . . . 80

Pro Pro Tyr Ile Leu Asp Leu Leu Pro Asp Thr Tyr Gln His Leu Arg  
85 90 95

Thr Ile Leu Ser Arg Tyr Glu Gly Lys Met Glu Thr Leu Gly Glu Asn  
100 105 110

Thr Ile Ser Leu Phe Lys Glu Gly Lys Glu Arg Met Tyr Glu Glu Asn  
130 . . . . . 135 . . . . . 140

Ser Gln Pro Arg Arg Asn Leu Thr Lys Leu Ser Leu Ile Phe Ser His  
145 150 155 160

Met Leu Ala Glu Leu Lys Gly Ile Phe Pro Ser Gly Leu Phe Gln Gly  
165 170 175

Asp Thr Phe Arg Ile Thr Lys Ala Asp Ala Ala Glu Phe Trp Arg Lys  
180 . . . . . 185 . . . . . 190

Ala Phe Gly Glu Lys Thr Ile Val Pro Trp Lys Ser Phe Arg Gln Ala  
195 200 205

Leu His Glu Val His Pro Ile Ser Ser Gly Leu Glu Ala Met Ala Leu  
210 215 220

Lys Ser Thr Ile Asp Leu Thr Cys Asn Asp Tyr Ile Ser Val Phe Glu  
225 230 235 240

Phe Asp Ile Phe Thr Arg Leu Phe Gln Pro Trp Ser Ser Leu Leu Arg  
245 250 255

Asn Trp Asn Ser Leu Ala Val Thr His Pro Gly Tyr Met Ala Phe Leu  
260 265 270

Thr Tyr Asp Glu Val Lys Ala Arg Leu Gln Lys Phe Ile His Lys Pro  
275 280 285

Gly Ser Tyr Ile Phe Arg Leu Ser Cys Thr Arg Leu Gly Gln Trp Ala  
290 295 300

Ile Gly Tyr Val Thr Ala Asp Gly Asn Ile Leu Gln Thr Ile Pro His  
305 310 315 320

Asn Lys Pro Leu Phe Gln Ala Leu Ile Asp Gly Phe Arg Glu Gly Phe  
325 330 335

Tyr Leu Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu  
340 345 350

Cys Glu Pro Thr Pro Gln Asp His Ile Lys Val Thr Gln Glu Gln Tyr  
355 360 365

Glu Leu Tyr Cys Glu Met Gly Ser Thr Phe Gln Leu Cys Lys Ile Cys  
370 375 380

Ala Glu Asn Asp Lys Asp Val Lys Ile Glu Pro Cys Gly His Leu Met  
385 390 395 400

Cys Thr Ser Cys Leu Thr Ser Trp Gln Glu Ser Glu Gly Gln Gly Cys  
405 410 415

Pro Phe Cys Arg Cys Glu Ile Lys Gly Thr Glu Pro Ile Val Val Asp  
420 425 430

Pro Phe Asp Pro Arg Gly Ser Gly Ser Leu Leu Arg Gln Gly Ala Glu  
435 440 445

Gly Ala Pro Ser Pro Asn Tyr Asp Asp Asp Asp Glu Arg Ala Asp  
450 455 460

Asp Thr Leu Phe Met Met Lys Glu Leu Ala Gly Ala Lys Val Glu Arg  
465 470 475 480

Pro Pro Ser Pro Phe Ser Met Ala Pro Gln Ala Ser Leu Pro Pro Val  
485 490 495

Pro Pro Arg Leu Asp Leu Leu Pro Gln Arg Val Cys Val Pro Ser Ser  
500 505 510

Ala Ser Ala Leu Gly Thr Ala Ser Lys Ala Ala Ser Gly Ser Leu His  
515 520 525

Lys Asp Lys Pro Leu Pro Val Pro Pro Thr Leu Arg Asp Leu Pro Pro  
530 535 540

Pro Pro Pro Asp Arg Pro Tyr Ser Val Gly Ala Glu Ser Arg Pro

545	550	555	560
Gln Arg Arg Pro Leu Pro Cys Thr Pro Gly Asp Cys Pro Ser Arg Asp			
565	570	575	
Lys Leu Pro Pro Val Pro Ser Ser Arg Leu Gly Asp Ser Trp Leu Pro			
580	585	590	
Arg Pro Ile Pro Lys Val Pro Val Ser Ala Pro Ser Ser Ser Asp Pro			
595	600	605	
Trp Thr Gly Arg Glu Leu Thr Asn Arg His Ser Leu Pro Phe Ser Leu			
610	615	620	
Pro Ser Gln Met Glu Pro Arg Pro Asp Val Pro Arg Leu Gly Ser Thr			
625	630	635	640
Phe Ser Leu Asp Thr Ser Met Ser Met Asn Ser Ser Pro Leu Val Gly			
645	650	655	
Pro Glu Cys Asp His Pro Lys Ile Lys Pro Ser Ser Ser Ala Asn Ala			
660	665	670	
Ile Tyr Ser Leu Ala Ala Arg Pro Leu Pro Val Pro Lys Leu Pro Pro			
675	680	685	
Gly Glu Gln Cys Glu Gly Glu Glu Asp Thr Glu Phe Met Thr Pro Ser			
690	695	700	
Ser Arg Pro Leu Arg Pro Leu Asp Thr Ser Gln Ser Ser Arg Ala Cys			
705	710	715	720
Asp Cys Asp Gln Gln Ile Asp Ser Cys Thr Tyr Glu Ala Met Tyr Asn			
725	730	735	
Ile Gln Ser Gln Ala Pro Ser Ile Thr Glu Ser Ser Thr Phe Gly Glu			
740	745	750	
Gly Asn Leu Ala Ala Ala His Ala Asn Thr Gly Pro Glu Glu Ser Glu			
755	760	765	
Asn Glu Asp Asp Gly Tyr Asp Val Pro Lys Pro Pro Val Pro Ala Val			
770	775	780	
Leu Ala Arg Arg Thr Leu Ser Asp Ile Ser Asn Ala Ser Ser Ser Phe			
785	790	795	800
Gly Trp Leu Ser Leu Asp Gly Asp Pro Thr Thr Asn Val Thr Glu Gly			
805	810	815	
Ser Gln Val Pro Glu Arg Pro Pro Lys Pro Phe Pro Arg Arg Ile Asn			
820	825	830	
Ser Glu Arg Lys Ala Gly Ser Cys Gln Gln Gly Ser Gly Pro Ala Ala			
835	840	845	
Ser Ala Ala Thr Ala Ser Pro Gln Leu Ser Ser Glu Ile Glu Asn Leu			
850	855	860	
Met Ser Gln Gly Tyr Ser Tyr Gln Asp Ile Gln Lys Ala Leu Val Ile			
865	870	875	880

Ala Gln Asn Asn Ile Glu Met Ala Lys Asn Ile Leu Arg Glu Phe Val  
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Ser Ile Ser Ser Pro Ala His Val Ala Thr  
 900                    905

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Met Ala Gly Asn Val Lys Lys	Ser Ser Gly Ala Gly Gly	Gly Thr Gly	
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tcc ggg ggc tcg ggt tcg ggc ctg att ggg ctc atg aag gac gcc	96
Ser Gly Gly Ser Gly Gly Leu Ile Gly Leu Met Lys Asp Ala	
20                    25	30

ttc cag ccg cac cac cac cac ctc agc ccc cac ccg ccg	144
Phe Gln Pro. His His His His His His Leu Ser. Pro His Pro Pro	
35                    40	45

ggg acg gtg gac aag aag atg gtg gag aag tgc tgg aag ctc atg gac	192
Gly Thr Val Asp Lys Lys Met Val Glu Lys Cys Trp Lys Leu Met Asp	
50                    55	60

aag gtg gtg cgg ttg tgt cag aac cca aag ctg gcg cta aag aat agc	240	
Lys Val Val Arg Leu Cys Gln Asn. Pro Lys Leu Ala Leu Lys Asn Ser		
65                    70	75	80

cca cct tat atc tta gac ctg cta cca gat acc tac cag cat ctc cgt	288
Pro Pro Tyr Ile Leu Asp Leu Leu Pro Asp Thr Tyr Gln His Leu Arg	
85                    90	95

act atc ttg tca aga tat gag ggg aag atg gag aca ctt gga gaa aat	336
Thr Ile. Leu. Ser Arg Tyr Glu Gly Lys Met. Glu Thr Leu Gly Glu Asn	
100                    105	110

gag tat ttt agg gtg ttt atg gag aat ttg atg aag aaa act aag caa	384
Glu Tyr Phe Arg Val Phe Met Glu Asn Leu Met Lys Lys Thr Lys Gln	
115                    120	125

acc ata agc ctc ttc aag gag gga aaa gaa aga atg tat gag gag aat	432
---	-----

Thr Ile Ser Leu Phe Lys Glu Gly Lys Glu Arg Met Tyr Glu Glu Asn			
130	135	140	
tct cag cct agg cga aac cta acc aaa ctg tcc ctc atc ttc agc cac			480
Ser Gln Pro Arg Arg Asn Leu Thr Lys Leu Ser Leu Ile Phe Ser His			
145	150	155	160
atg ctg gca gaa cta aaa gga atc ttt cca agt gga ctc ttt cag gga			528
Met Leu Ala Glu Leu Lys Gly Ile Phe Pro Ser Gly Leu Phe Gln Gly			
165	170	175	
gac aca ttt cgg att act aaa gca gat gct gcg gaa ttt tgg aga aaa			576
Asp Thr Phe Arg Ile Thr Lys Ala Asp Ala Ala Glu Phe Trp Arg Lys			
180	185	190	
gct ttt ggg gaa aag aca ata gtc cct tgg aag agc ttt cga cag gct			624
Ala Phe Gly Glu Lys Thr Ile Val Pro Trp Lys Ser Phe Arg Gln Ala			
195	200	205	
cta cat gaa gtg cat ccc atc agt tct ggg ctg gag gcc atg gct ctg			672
Leu His Glu Val His Pro Ile Ser Ser Gly Leu Glu Ala Met Ala Leu			
210	215	220	
aaa tcc act att gat ctg acc tgc aat gat tat att tcg gtt ttt gaa			720
Lys Ser Thr Ile Asp Leu Thr Cys Asn Asp Tyr Ile Ser Val Phe Glu			
225	230	235	240
ttt gac atc ttt acc cga ctc ttt cag ccc tgg tcc tct ttg ctc agg			768
Phe Asp Ile Phe Thr Arg Leu Phe Gln Pro Trp Ser Ser Leu Leu Arg			
245	250	255	
aat tgg aac agc ctt gct gta act cat cct ggc tac atg gct ttt ttg			816
Asn Trp Asn Ser Leu Ala Val Thr His Pro Gly Tyr Met Ala Phe Leu			
260	265	270	
acg tat gac gaa gtg aaa gct cgg ctc cag aaa ttc att cac aaa cct			864
Thr Tyr Asp Glu Val Lys Ala Arg Leu Gln Lys Phe Ile His Lys Pro			
275	280	285	
ggc agt tat atc ttc cgg ctg agc tgt act cgt ctg ggt cag tgg gct			912
Gly Ser Tyr Ile Phe Arg Leu Ser Cys Thr Arg Leu Gly Gln Trp Ala			
290	295	300	
att ggg tat gtt act gct gat ggg aac att ctc cag aca atc cct cac			960
Ile Gly Tyr Val Thr Ala Asp Gly Asn Ile Leu Gln Thr Ile Pro His			
305	310	315	320
aat aaa cct ctc ttc caa gca ctg att gat ggc ttc agg gaa ggc ttc			1008
Asn Lys Pro Leu Phe Gln Ala Leu Ile Asp Gly Phe Arg Glu Gly Phe			
325	330	335	
tat ttg ttt cct gat gga cga aat cag aat cct gat ctg act ggc tta			1056
Tyr Leu Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu			
340	345	350	
tgt gaa cca act ccc caa gac cat atc aaa gtg acc cag gaa caa tat			1104
Cys Glu Pro Thr Pro Gln Asp His Ile Lys Val Thr Gln Glu Gln Tyr			
355	360	365	
gaa tta tac tgt gag atg ggc tcc aca ttc caa cta tgt aaa ata tgt			1152
Glu Leu Tyr Cys Glu Met Gly Ser Thr Phe Gln Leu Cys Lys Ile Cys			

370	375	380	
gct gaa aat gat aag gat gta aag att gag ccc tgt gga cac ctc atg Ala Glu Asn Asp Lys Asp Val Lys Ile Glu Pro Cys Gly His Leu Met 385                   390                   395                   400			
tgc aca tcc tgt ctt aca tcc tgg cag gaa tca gaa ggt cag ggc tgt Cys Thr Ser Cys Leu Thr Ser Trp Gln Glu Ser Glu Gly Gln Gly Cys 405                   410                   415			
cct ttc tgc cga tgt gaa att aaa ggt act gaa ccc atc gtg gta gat Pro Phe Cys Arg Cys Glu Ile Lys Gly Thr Glu Pro Ile Val Val Asp 420                   425                   430			
ccg ttt gat cct aga ggg agt ggc agc ctg ttg agg caa gga gca gag Pro Phe Asp Pro Arg Gly Ser Gly Ser Leu Leu Arg Gln Gly Ala Glu 435                   440                   445			
gga gct ccc tcc cca aat tat gat gat gat gat gaa cga gct gat Gly Ala Pro Ser Pro Asn Tyr Asp Asp Asp Asp Asp Glu Arg Ala Asp 450                   455                   460			
gat act ctc ttc atg atg aag gaa ttg gct ggt gcc aag gtg gaa cgg Asp Thr Leu Phe Met Met Lys Glu Leu Ala Gly Ala Lys Val Glu Arg 465                   470                   475                   480			
ccg cct tct cca ttc tcc atg gcc cca caa gct tcc ctt ccc ccg gtg Pro Pro Ser Pro Phe Ser Met Ala Pro Gln Ala Ser Leu Pro Pro Val 485                   490                   495			
cca cca cga ctt gac ctt ctg ccg cag cga gta tgt gtt ccc tca agt Pro Pro Arg Leu Asp Leu Leu Pro Gln Arg Val Cys Val Pro Ser Ser 500                   505                   510			
gct tct gct ctt gga act gct tct aag gct gct tct ggc tcc ctt cat Ala Ser Ala Leu Gly Thr Ala Ser Lys Ala Ala Ser Gly Ser Leu His 515                   520                   525			
aaa gac aaa cca ttg cca gta cct ccc aca ctt cga gat ctt cca cca Lys Asp Lys Pro Leu Pro Val Pro Pro Thr Leu Arg Asp Leu Pro Pro 530                   535                   540			
cca ccg cct cca gac cgg cca tat tct gtt gga gca gaa tcc cga cct Pro Pro Pro Asp Arg Pro Tyr Ser Val Gly Ala Glu Ser Arg Pro 545                   550                   555                   560			
caa aga cgc ccc ttg cct tgt aca cca ggc gac tgt ccc tcc aga gac Gln Arg Arg Pro Leu Pro Cys Thr Pro Gly Asp Cys Pro Ser Arg Asp 565                   570                   575			
aaa ctg ccc cct gtc ccc tct agc cgc ctt gga gac tca tgg ctg ccc Lys Leu Pro Pro Val Pro Ser Ser Arg Leu Gly Asp Ser Trp Leu Pro 580                   585                   590			
cgg cca atc ccc aaa gta cca gta tct gcc cca agt tcc agt gat ccc Arg Pro Ile Pro Lys Val Pro Val Ser Ala Pro Ser Ser Ser Asp Pro 595                   600                   605			
tgg aca gga aga gaa tta acc aac cgg cac tca ctt cca ttt tca ttg Trp Thr Gly Arg Glu Leu Thr Asn Arg His Ser Leu Pro Phe Ser Leu 610                   615                   620			

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cca gag tgt gac cac ccc aaa atc aaa cct tcc tca tct gcc aat gcc Pro Glu Cys Asp His Pro Lys Ile Lys Pro Ser Ser Ser Ala Asn Ala 660 665 670	2016
att tat tct ctg gct gcc aga cct ctt cct gtg cca aaa ctg cca cct Ile Tyr Ser Leu Ala Ala Arg Pro Leu Pro Val Pro Lys Leu Pro Pro 675 680 685	2064
ggg gag caa tgt gag ggt gaa gag gac aca gag tac atg act ccc tct Gly Glu Gln Cys Glu Gly Glu Glu Asp Thr Glu Tyr Met Thr Pro Ser 690 695 700	2112
tcc agg cct cta cgg cct ttg gat aca tcc cag agt tca cga gca tgt Ser Arg Pro Leu Arg Pro Leu Asp Thr Ser Gln Ser Ser Arg Ala Cys 705 710 715 720	2160
gat tgc gac cag cag att gat agc tgt acg ttt gaa gca atg tat aat Asp Cys Asp Gln Gln Ile Asp Ser Cys Thr Phe Glu Ala Met Tyr Asn 725 730 735	2208
att cag tcc cag gcg cca tct atc acc gag agc agc acc ttt ggt gaa Ile Gln Ser Gln Ala Pro Ser Ile Thr Glu Ser Ser Thr Phe Gly Glu 740 745 750	2256
ggg aat ttg gcc gca gcc cat gcc aac act ggt ccc gag gag tca gaa Gly Asn Leu Ala Ala Ala His Ala Asn Thr Gly Pro Glu Glu Ser Glu 755 760 765	2304
aat gag gat gat ggg tat gat gtc cca aag cca cct gtg ccg gcc gtg Asn Glu Asp Asp Gly Tyr Asp Val Pro Lys Pro Pro Val Pro Ala Val 770 775 780	2352
ctg gcc cgc cga act ctc tca gat atc tct aat gcc agc tcc tcc ttt Leu Ala Arg Arg Thr Leu Ser Asp Ile Ser Asn Ala Ser Ser Ser Phe 785 790 795 800	2400
ggc tgg ttg tct ctg gat ggt gat cct aca aca aat gtc act gaa ggt Gly Trp Leu Ser Leu Asp Gly Asp Pro Thr Thr Asn Val Thr Glu Gly 805 810 815	2448
tcc caa gtt ccc gag agg cct cca aaa cca ttc ccg cgg aga atc aac Ser Gln Val Pro Glu Arg Pro Pro Lys Pro Phe Pro Arg Arg Ile Asn 820 825 830	2496
tct gaa cgg aaa gct ggc agc tgt cag caa ggt agt ggt cct gcc gcc Ser Glu Arg Lys Ala Gly Ser Cys Gln Gln Gly Ser Gly Pro Ala Ala 835 840 845	2544
tct gct gcc acc gcc tca cct cag ctc tcc agt gag atc gag aac ctc Ser Ala Ala Thr Ala Ser Pro Gln Leu Ser Ser Glu Ile Glu Asn Leu 850 855 860	2592

atg agt cag ggg tac tcc tac cag gac atc cag aaa gct ttg gtc att 2640  
 Met Ser Gln Gly Tyr Ser Tyr Gln Asp Ile Gln Lys Ala Leu Val Ile  
 865 870 875 880

gcc cag aac aac atc gag atg gcc aaa aac atc ctc cgg gaa ttt gtt 2688  
 Ala Gln Asn Asn Ile Glu Met Ala Lys Asn Ile Leu Arg Glu Phe Val  
 885 890 895

tcc att tct tct cct gcc cat gta gct acc tag 2721  
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<212> PRT

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 20 25 30

Phe Gln Pro His His His His His His Leu Ser Pro His Pro Pro  
 35 40 45

Gly Thr Val Asp Lys Lys Met Val Glu Lys Cys Trp Lys Leu Met Asp  
 50 55 60

Lys Val Val Arg Leu Cys Gln Asn Pro Lys Leu Ala Leu Lys Asn Ser  
 65 70 75 80

Pro Pro Tyr Ile Leu Asp Leu Leu Pro Asp Thr Tyr Gln His Leu Arg  
 85 90 95

Thr Ile Leu Ser Arg Tyr Glu Gly Lys Met Glu Thr Leu Gly Glu Asn  
 100 105 110

Glu Tyr Phe Arg Val Phe Met Glu Asn Leu Met Lys Lys Thr Lys Gln  
 115 120 125

Thr Ile Ser Leu Phe Lys Glu Gly Lys Glu Arg Met Tyr Glu Glu Asn  
 130 135 140

Ser Gln Pro Arg Arg Asn Leu Thr Lys Leu Ser Leu Ile Phe Ser His  
 145 150 155 160

Met Leu Ala Glu Leu Lys Gly Ile Phe Pro Ser Gly Leu Phe Gln Gly  
 165 170 175

Asp Thr Phe Arg Ile Thr Lys Ala Asp Ala Ala Glu Phe Trp Arg Lys  
 180 185 190

Ala Phe Gly Glu Lys Thr Ile Val Pro Trp Lys Ser Phe Arg Gln Ala  
195 200 205

Leu His Glu Val His Pro Ile Ser Ser Gly Leu Glu Ala Met Ala Leu  
210 215 220

Lys Ser Thr Ile Asp Leu Thr Cys Asn Asp Tyr Ile Ser Val Phe Glu  
225 230 235 240

Phe Asp Ile Phe Thr Arg Leu Phe Gln Pro Trp Ser Ser Leu Leu Arg  
245 250 255

Asn Trp Asn Ser Leu Ala Val Thr His Pro Gly Tyr Met Ala Phe Leu  
260 265 270

Thr Tyr Asp Glu Val Lys Ala Arg Leu Gln Lys Phe Ile His Lys Pro  
275 280 285

Gly Ser Tyr Ile Phe Arg Leu Ser Cys Thr Arg Leu Gly Gln Trp Ala  
290 295 300

Ile Gly Tyr Val Thr Ala Asp Gly Asn Ile Leu Gln Thr Ile Pro His  
305 310 315 320

Asn Lys Pro Leu Phe Gln Ala Leu Ile Asp Gly Phe Arg Glu Gly Phe  
325 330 335

Tyr Leu Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu  
340 345 350

Cys Glu Pro Thr Pro Gln Asp His Ile Lys Val Thr Gln Glu Gln Tyr  
355 360 365

Glu Leu Tyr Cys Glu Met Gly Ser Thr Phe Gln Leu Cys Lys Ile Cys  
370 375 380

Ala Glu Asn Asp Lys Asp Val Lys Ile Glu Pro Cys Gly His Leu Met  
385 390 395 400

Cys Thr Ser Cys Leu Thr Ser Trp Gln Glu Ser Glu Gly Gln Gly Cys  
405 410 415

Pro Phe Cys Arg Cys Glu Ile Lys Gly Thr Glu Pro Ile Val Val Asp  
420 425 430

Pro Phe Asp Pro Arg Gly Ser Gly Ser Leu Leu Arg Gln Gly Ala Glu  
435 440 445

Gly Ala Pro Ser Pro Asn Tyr Asp Asp Asp Asp Glu Arg Ala Asp  
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Asp Thr Leu Phe Met Met Lys Glu Leu Ala Gly Ala Lys Val Glu Arg  
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Pro Pro Ser Pro Phe Ser Met Ala Pro Gln Ala Ser Leu Pro Pro Val  
485 490 495

Pro Pro Arg Leu Asp Leu Leu Pro Gln Arg Val Cys Val Pro Ser Ser  
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Ala Ser Ala Leu Gly Thr Ala Ser Lys Ala Ala Ser Gly Ser Leu His  
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Lys Asp Lys Pro Leu Pro Val Pro Pro Thr Leu Arg Asp Leu Pro Pro  
530 535 540

Pro Pro Pro Pro Asp Arg Pro Tyr Ser Val Gly Ala Glu Ser Arg Pro  
545 550 555 560

Gln Arg Arg Pro Leu Pro Cys Thr Pro Gly Asp Cys Pro Ser Arg Asp  
565 570 575

Lys Leu Pro Pro Val Pro Ser Ser Arg Leu Gly Asp Ser Trp Leu Pro  
580 585 590

Arg Pro Ile Pro Lys Val Pro Val Ser Ala Pro Ser Ser Ser Asp Pro  
595 600 605

Trp Thr Gly Arg Glu Leu Thr Asn Arg His Ser Leu Pro Phe Ser Leu  
610 615 620

Pro Ser Gln Met Glu Pro Arg Pro Asp Val Pro Arg Leu Gly Ser Thr  
625 630 635 640

Phe Ser Leu Asp Thr Ser Met Ser Met Asn Ser Ser Pro Leu Val Gly  
645 650 655

Pro Glu Cys Asp His Pro Lys Ile Lys Pro Ser Ser Ser Ala Asn Ala  
660 665 670

Ile Tyr Ser Leu Ala Ala Arg Pro Leu Pro Val Pro Lys Leu Pro Pro  
675 680 685

Gly Glu Gln Cys Glu Gly Glu Asp Thr Glu Tyr Met Thr Pro Ser  
690 695 700

Ser Arg Pro Leu Arg Pro Leu Asp Thr Ser Gln Ser Ser Arg Ala Cys  
705 710 715 720

Asp Cys Asp Gln Gln Ile Asp Ser Cys Thr Phe Glu Ala Met Tyr Asn  
725 730 735

Ile Gln Ser Gln Ala Pro Ser Ile Thr Glu Ser Ser Thr Phe Gly Glu  
740 745 750

Gly Asn Leu Ala Ala Ala His Ala Asn Thr Gly Pro Glu Glu Ser Glu  
755 760 765

Asn Glu Asp Asp Gly Tyr Asp Val Pro Lys Pro Pro Val Pro Ala Val  
770 775 780

Leu Ala Arg Arg Thr Leu Ser Asp Ile Ser Asn Ala Ser Ser Ser Phe  
785 790 795 800

Gly Trp Leu Ser Leu Asp Gly Asp Pro Thr Thr Asn Val Thr Glu Gly  
805 810 815

Ser Gln Val Pro Glu Arg Pro Pro Lys Pro Phe Pro Arg Arg Ile Asn  
820 825 830

Ser Glu Arg Lys Ala Gly Ser Cys Gln Gln Gly Ser Gly Pro Ala Ala  
 835                        840                        845

Ser Ala Ala Thr Ala Ser Pro Gln Leu Ser Ser Glu Ile Glu Asn Leu  
 850                        855                        860

Met Ser Gln Gly Tyr Ser Tyr Gln Asp Ile Gln Lys Ala Leu Val Ile  
 865                        870                        875                        880

Ala Gln Asn Asn Ile Glu Met Ala Lys Asn Ile Leu Arg Glu Phe Val  
 885                        890                        895

Ser Ile Ser Ser Pro Ala His Val Ala Thr  
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tcc ggg ggc tcg ggt tcg ggt ggc ctg att ggg ctc atg aag gac gcc      96  
 Ser Gly Gly Ser Gly Gly Leu Ile Gly Leu Met Lys Asp Ala  
 20                25                                30

ttc cag ccg cac cac cac cac cac ctc agc ccc cac ccg ccg      144  
 Phe Gln Pro His His His His His His Leu Ser Pro His Pro Pro  
 35                40                                45

ggg acg gtg gac aag aag atg gtg gag aag tgc tgg aag ctc atg gac      192  
 Gly Thr Val Asp Lys Lys Met Val Glu Lys Cys Trp Lys Leu Met Asp  
 50                55                                60

aag gtg gtg cgg ttg tgt cag aac cca aag ctg gcg cta aag aat agc      240  
 Lys Val Val Arg Leu Cys Gln Asn Pro Lys Leu Ala Leu Lys Asn Ser  
 65                70                                75                        80

cca cct tat atc tta gac ctg cta cca gat acc tac cag cat ctc cgt      288  
 Pro Pro Tyr Ile Leu Asp Leu Leu Pro Asp Thr Tyr Gln His Leu Arg  
 85                90                                95

act atc ttg tca aga tat gag ggg aag atg gag aca ctt gga gaa aat Thr Ile Leu Ser Arg Tyr Glu Gly Lys Met Glu Thr Leu Gly Glu Asn 100 105 110	336
gag tat ttt agg gtg ttt atg gag aat ttg atg aag aaa act aag caa Glu Tyr Phe Arg Val Phe Met Glu Asn Leu Met Lys Lys Thr Lys Gln 115 120 125	384
acc ata agc ctc ttc aag gag gga aaa gaa aga atg tat gag gag aat Thr Ile Ser Leu Phe Lys Glu Gly Lys Glu Arg Met Tyr Glu Glu Asn 130 135 140	432
tct cag cct agg cga aac cta acc aaa ctg tcc ctc atc ttc agc cac Ser Gln Pro Arg Arg Asn Leu Thr Lys Leu Ser Ile Phe Ser His 145 150 155 160	480
atg ctg gca gaa cta aaa gga atc ttt cca agt gga ctc ttt cag gga Met Leu Ala Glu Leu Lys Gly Ile Phe Pro Ser Gly Leu Phe Gln Gly 165 170 175	528
gac aca ttt cgg att act aaa gca gat gct gcg gaa ttt tgg aga aaa Asp Thr Phe Arg Ile Thr Lys Ala Asp Ala Ala Glu Phe Trp Arg Lys 180 185 190	576
gct ttt ggg gaa aag aca ata gtc cct tgg aag agc ttt cga cag gct Ala Phe Gly Glu Lys Thr Ile Val Pro Trp Lys Ser Phe Arg Gln Ala 195 200 205	624
cta cat gaa gtg cat ccc atc agt tct ggg ctg gag gcc atg gct ctg Leu His Glu Val His Pro Ile Ser Ser Gly Leu Glu Ala Met Ala Leu 210 215 220	672
aaa tcc act att gat ctg acc tgc aat gat tat att tcg gtt ttt gaa Lys Ser Thr Ile Asp Leu Thr Cys Asn Asp Tyr Ile Ser Val Phe Glu 225 230 235 240	720
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aat tgg aac agc ctt gct gta act cat cct ggc tac atg gct ttt ttg Asn Trp Asn Ser Leu Ala Val Thr His Pro Gly Tyr Met Ala Phe Leu 260 265 270	816
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aat aaa cct ctc ttccaa gca ctg att gat ggc ttc agg gaa ggc ttc Asn Lys Pro Leu Phe Gln Ala Leu Ile Asp Gly Phe Arg Glu Gly Phe 325 330 335	1008
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Tyr Leu Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu			
340	345	350	
tgt gaa cca act ccc caa gac cat atc aaa gtg acc cag gaa caa tat		1104	
Cys Glu Pro Thr Pro Gln Asp His Ile Lys Val Thr Gln Glu Gln Tyr			
355	360	365	
gaa tta tac tgt gag atg ggc tcc aca ttc caa cta tgt aaa ata tgt		1152	
Glu Leu Tyr Cys Glu Met Gly Ser Thr Phe Gln Leu Cys Lys Ile Cys			
370	375	380	
gct gaa aat gat aag gat gta aag att gag ccc tgt gga cac ctc atg		1200	
Ala Glu Asn Asp Lys Asp Val Lys Ile Glu Pro Cys Gly His Leu Met			
385	390	395	400
tgc aca tcc tgt ctt aca tcc tgg cag gaa tca gaa ggt cag ggc tgt		1248	
Cys Thr Ser Cys Leu Thr Ser Trp Gln Glu Ser Glu Gly Gln Gly Cys			
405	410	415	
cct ttc tgc cga tgt gaa att aaa ggt act gaa ccc atc gtg gta gat		1296	
Pro Phe Cys Arg Cys Glu Ile Lys Gly Thr Glu Pro Ile Val Val Asp			
420	425	430	
ccg ttt gat cct aga ggg agt ggc agc ctg ttg agg caa gga gca gag		1344	
Pro Phe Asp Pro Arg Gly Ser Gly Ser Leu Leu Arg Gln Gly Ala Glu			
435	440	445	
gga gct ccc tcc cca aat tat gat gat gat gat gaa cga gct gat		1392	
Gly Ala Pro Ser Pro Asn Tyr Asp Asp Asp Asp Glu Arg Ala Asp			
450	455	460	
gat act ctc ttc atg atg aag gaa ttg gct ggt gcc aag gtg gaa cgg		1440	
Asp Thr Leu Phe Met Met Lys Glu Leu Ala Gly Ala Lys Val Glu Arg			
465	470	475	480
ccg cct tct cca ttc tcc atg gcc cca caa gct tcc ctt ccc ccg gtg		1488	
Pro Pro Ser Pro Phe Ser Met Ala Pro Gln Ala Ser Leu Pro Pro Val			
485	490	495	
cca cca cga ctt gac ctt ctg ccg cag cga gta tgt gtt ccc tca agt		1536	
Pro Pro Arg Leu Asp Leu Leu Pro Gln Arg Val Cys Val Pro Ser Ser			
500	505	510	
gct tct gct ctt gga act gct tct aag gct gct tct ggc tcc ctt cat		1584	
Ala Ser Ala Leu Gly Thr Ala Ser Lys Ala Ala Ser Gly Ser Leu His			
515	520	525	
aaa gac aaa cca ttg cca gta cct ccc aca ctt cga gat ctt cca cca		1632	
Lys Asp Lys Pro Leu Pro Val Pro Pro Thr Leu Arg Asp Leu Pro Pro			
530	535	540	
cca ccg cct cca gac cgg cca tat tct gtt gga gca gaa tcc cga cct		1680	
Pro Pro Pro Asp Arg Pro Tyr Ser Val Gly Ala Glu Ser Arg Pro			
545	550	555	560
caa aga cgc ccc ttg cct tgt aca cca ggc gac tgt ccc tcc aga gac		1728	
Gln Arg Arg Pro Leu Pro Cys Thr Pro Gly Asp Cys Pro Ser Arg Asp			
565	570	575	
aaa ctg ccc cct gtc ccc tct agc cgc ctt gga gac tca tgg ctg ccc		1776	
Lys Leu Pro Pro Val Pro Ser Ser Arg Leu Gly Asp Ser Trp Leu Pro			

580

585

590

cg<sup>g</sup> cca atc ccc aaa gta cca gta tct gcc cca agt tcc agt gat ccc      1824  
 Arg Pro Ile Pro Lys Val Pro Val Ser Ala Pro Ser Ser Ser Asp Pro  
   595                600                605  
  
 tgg aca gga aga gaa tta acc aac cg<sup>g</sup> cac tca ctt cca ttt tca ttg      1872  
 Trp Thr Gly Arg Glu Leu Thr Asn Arg His Ser Leu Pro Phe Ser Leu  
   610                615                620  
  
 ccc tca caa atg gag ccc aga cca gat gtg cct agg ctc gga agc acg      1920  
 Pro Ser Gln Met Glu Pro Arg Pro Asp Val Pro Arg Leu Gly Ser Thr  
   625                630                635                640  
  
 ttc agt ctg gat acc tcc atg agt atg aat agc agc cca tta gta ggt      1968  
 Phe Ser Leu Asp Thr Ser Met Ser Met Asn Ser Ser Pro Leu Val Gly  
   645                650                655  
  
 cca gag tgt gac cac ccc aaa atc aaa cct tcc tca tct gcc aat gcc      2016  
 Pro Glu Cys Asp His Pro Lys Ile Lys Pro Ser Ser Ser Ala Asn Ala  
   660                665                670  
  
 att tat tct ctg gct gcc aga cct ctt cct gtg cca aaa ctg cca cct      2064  
 Ile Tyr Ser Leu Ala Ala Arg Pro Leu Pro Val Pro Lys Leu Pro Pro  
   675                680                685  
  
 ggg gag caa tgt gag ggt gaa gag gac aca gag tac atg act ccc tct      2112  
 Gly Glu Gln Cys Glu Gly Glu Asp Thr Glu Tyr Met Thr Pro Ser  
   690                695                700  
  
 tcc agg cct cta cg<sup>g</sup> cct ttg gat aca tcc cag agt tca cga gca tgt      2160  
 Ser Arg Pro Leu Arg Pro Ile Asp Thr Ser Gln Ser Ser Arg Ala Cys  
   705                710                715                720  
  
 gat tgc gac cag cag att gat agc tgt acg tat gaa gca atg tat aat      2208  
 Asp Cys Asp Gln Gln Ile Asp Ser Cys Thr Tyr Glu Ala Met Tyr Asn  
   725                730                735  
  
 att cag tcc cag gcg cca tct atc acc gag agc agc acc ttt ggt gaa      2256  
 Ile Gln Ser Gln Ala Pro Ser Ile Thr Glu Ser Ser Thr Phe Gly Glu  
   740                745                750  
  
 ggg aat ttg gcc gca gcc cat gcc aac act ggt ccc gag gag tca gaa      2304  
 Gly Asn Leu Ala Ala Ala His Ala Asn Thr Gly Pro Glu Glu Ser Glu  
   755                760                765  
  
 aat gag gat gat ggg ttt gat gtc cca aag cca cct gtg ccg gcc gtg      2352  
 Asn Glu Asp Asp Gly Phe Asp Val Pro Lys Pro Pro Val Pro Ala Val  
   770                775                780  
  
 ctg gcc cgc cga act ctc tca gat atc tct aat gcc agc tcc tcc ttt      2400  
 Leu Ala Arg Arg Thr Leu Ser Asp Ile Ser Asn Ala Ser Ser Ser Phe  
   785                790                795                800  
  
 ggc tgg ttg tct ctg gat ggt gat cct aca aca aat gtc act gaa ggt      2448  
 Gly Trp Leu Ser Leu Asp Gly Asp Pro Thr Thr Asn Val Thr Glu Gly  
   805                810                815  
  
 tcc caa gtt ccc gag agg cct cca aaa cca ttc ccg cgg aga atc aac      2496  
 Ser Gln Val Pro Glu Arg Pro Pro Lys Pro Phe Pro Arg Arg Ile Asn  
   820                825                830

tct gaa cgg aaa gct ggc agc tgt cag caa ggt agt ggt cct gcc gcc 2544  
 Ser Glu Arg Lys Ala Gly Ser Cys Gln Gln Gly Ser Gly Pro Ala Ala  
 835 840 845

tct gct gcc acc gcc tca cct cag ctc tcc agt gag atc gag aac ctc 2592  
 Ser Ala Ala Thr Ala Ser Pro Gln Leu Ser Ser Glu Ile Glu Asn Leu  
 850 855 860

atg agt cag ggg tac tcc tac cag gac atc cag aaa gct ttg gtc att 2640  
 Met Ser Gln Gly Tyr Ser Tyr Gln Asp Ile Gln Lys Ala Leu Val Ile  
 865 870 875 880

gcc cag aac aac atc gag atg gcc aaa aac atc ctc cgg gaa ttt gtt 2688  
 Ala Gln Asn Asn Ile Glu Met Ala Lys Asn Ile Leu Arg Glu Phe Val  
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Phe Gln Pro His His His His His His Leu Ser Pro His Pro Pro  
 35 40 45

Gly Thr Val Asp Lys Lys Met Val Glu Lys Cys Trp Lys Leu Met Asp  
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Lys Val Val Arg Leu Cys Gln Asn Pro Lys Leu Ala Leu Lys Asn Ser  
 65 70 75 80

Pro Pro Tyr Ile Leu Asp Leu Leu Pro Asp Thr Tyr Gln His Leu Arg  
 85 90 95

Thr Ile Leu Ser Arg Tyr Glu Gly Lys Met Glu Thr Leu Gly Glu Asn  
 100 105 110

Glu Tyr Phe Arg Val Phe Met Glu Asn Leu Met Lys Lys Thr Lys Gln  
 115 120 125

Thr Ile Ser Leu Phe Lys Glu Gly Lys Glu Arg Met Tyr Glu Glu Asn  
 130 135 140

Ser Gln Pro Arg Arg Asn Leu Thr Lys Leu Ser Leu Ile Phe Ser His

73/88

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Met Leu Ala Glu Leu Lys Gly Ile Phe Pro Ser Gly Leu Phe Gln Gly			
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Asp Thr Phe Arg Ile Thr Lys Ala Asp Ala Ala Glu Phe Trp Arg Lys			
180	185	190	
Ala Phe Gly Glu Lys Thr Ile Val Pro Trp Lys Ser Phe Arg Gln Ala			
195	200	205	
Leu His Glu Val His Pro Ile Ser Ser Gly Leu Glu Ala Met Ala Leu			
210	215	220	
Lys Ser Thr Ile Asp Leu Thr Cys Asn Asp Tyr Ile Ser Val Phe Glu			
225	230	235	240
Phe Asp Ile Phe Thr Arg Leu Phe Gln Pro Trp Ser Ser Leu Leu Arg			
245	250	255	
Asn Trp Asn Ser Leu Ala Val Thr His Pro Gly Tyr Met Ala Phe Leu			
260	265	270	
Thr Tyr Asp Glu Val Lys Ala Arg Leu Gln Lys Phe Ile His Lys Pro			
275	280	285	
Gly Ser Tyr Ile Phe Arg Leu Ser Cys Thr Arg Leu Gly Gln Trp Ala			
290	295	300	
Ile Gly Tyr Val Thr Ala Asp Gly Asn Ile Leu Gln Thr Ile Pro His			
305	310	315	320
Asn Lys Pro Leu Phe Gln Ala Leu Ile Asp Gly Phe Arg Glu Gly Phe			
325	330	335	
Tyr Leu Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu			
340	345	350	
Cys Glu Pro Thr Pro Gln Asp His Ile Lys Val Thr Gln Glu Gln Tyr			
355	360	365	
Glu Leu Tyr Cys Glu Met Gly Ser Thr Phe Gln Leu Cys Lys Ile Cys			
370	375	380	
Ala Glu Asn Asp Lys Asp Val Lys Ile Glu Pro Cys Gly His Leu Met			
385	390	395	400
Cys Thr Ser Cys Leu Thr Ser Trp Gln Glu Ser Glu Gly Gln Gly Cys			
405	410	415	
Pro Phe Cys Arg Cys Glu Ile Lys Gly Thr Glu Pro Ile Val Val Asp			
420	425	430	
Pro Phe Asp Pro Arg Gly Ser Gly Ser Leu Leu Arg Gln Gly Ala Glu			
435	440	445	
Gly Ala Pro Ser Pro Asn Tyr Asp Asp Asp Asp Glu Arg Ala Asp			
450	455	460	
Asp Thr Leu Phe Met Met Lys Glu Leu Ala Gly Ala Lys Val Glu Arg			
465	470	475	480

Pro Pro Ser Pro Phe Ser Met Ala Pro Gln Ala Ser Leu Pro Pro Val  
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Pro Pro Arg Leu Asp Leu Leu Pro Gln Arg Val Cys Val Pro Ser Ser  
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Ala Ser Ala Leu Gly Thr Ala Ser Lys Ala Ala Ser Gly Ser Leu His  
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Lys Asp Lys Pro Leu Pro Val Pro Pro Thr Leu Arg Asp Leu Pro Pro  
530 535 540

Pro Pro Pro Asp Arg Pro Tyr Ser Val Gly Ala Glu Ser Arg Pro  
545 550 555 560

Gln Arg Arg Pro Leu Pro Cys Thr Pro Gly Asp Cys Pro Ser Arg Asp  
565 570 575

Lys Leu Pro Pro Val Pro Ser Ser Arg Leu Gly Asp Ser Trp Leu Pro  
580 585 590

Arg Pro Ile Pro Lys Val Pro Val Ser Ala Pro Ser Ser Ser Asp Pro  
595 600 605

Trp Thr Gly Arg Glu Leu Thr Asn Arg His Ser Leu Pro Phe Ser Leu  
610 615 620

Pro Ser Gln Met Glu Pro Arg Pro Asp Val Pro Arg Leu Gly Ser Thr  
625 630 635 640

Phe Ser Leu Asp Thr Ser Met Ser Met Asn Ser Ser Pro Leu Val Gly  
645 650 655

Pro Glu Cys Asp His Pro Lys Ile Lys Pro Ser Ser Ser Ala Asn Ala  
660 665 670

Ile Tyr Ser Leu Ala Ala Arg Pro Leu Pro Val Pro Lys Leu Pro Pro  
675 680 685

Gly Glu Gln Cys Glu Gly Glu Asp Thr Glu Tyr Met Thr Pro Ser  
690 695 700

Ser Arg Pro Leu Arg Pro Leu Asp Thr Ser Gln Ser Ser Arg Ala Cys  
705 710 715 720

Asp Cys Asp Gln Gln Ile Asp Ser Cys Thr Tyr Glu Ala Met Tyr Asn  
725 730 735

Ile Gln Ser Gln Ala Pro Ser Ile Thr Glu Ser Ser Thr Phe Gly Glu  
740 745 750

Gly Asn Leu Ala Ala Ala His Ala Asn Thr Gly Pro Glu Glu Ser Glu  
755 760 765

Asn Glu Asp Asp Gly Phe Asp Val Pro Lys Pro Pro Val Pro Ala Val  
770 775 780

Leu Ala Arg Arg Thr Leu Ser Asp Ile Ser Asn Ala Ser Ser Ser Phe  
785 790 795 800

Gly Trp Leu Ser Leu Asp Gly Asp Pro Thr Thr Asn Val Thr Glu Gly  
 805                        810                        815

Ser Gln Val Pro Glu Arg Pro Pro Lys Pro Phe Pro Arg Arg Ile Asn  
 820                        825                        830

Ser Glu Arg Lys Ala Gly Ser Cys Gln Gln Gly Ser Gly Pro Ala Ala  
 835                        840                        845

Ser Ala Ala Thr Ala Ser Pro Gln Leu Ser Ser Glu Ile Glu Asn Leu  
 850                        855                        860

Met Ser Gln Gly Tyr Ser Tyr Gln Asp Ile Gln Lys Ala Leu Val Ile  
 865                        870                        875                        880

Ala Gln Asn Asn Ile Glu Met Ala Lys Asn Ile Leu Arg Glu Phe Val  
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Ser Ile Ser Ser Pro Ala His Val Ala Thr  
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tcc ggg ggc tcg ggt tcg ggt ggc ctg att ggg ctc atg aag gac gcc	96
Ser Gly Gly Ser Gly Gly Leu Ile Gly Leu Met Lys Asp Ala	
20                        25                                30	

ttc cag ccg cac cac cac cac cac ctc agc ccc cac ccg ccg	144
Phe Gln Pro His His His His His His Leu Ser Pro His Pro Pro	
35                        40                                45	

ggg acg gtg gac aag aag atg gtg gag aag tgc tgg aag ctc atg gac	192
Gly Thr Val Asp Lys Lys Met Val Glu Lys Cys Trp Lys Leu Met Asp	
50                        55                                60	

aag gtg gtg cgg ttg tgt cag aac cca aag ctg gcg cta aag aat agc	240
Lys Val Val Arg Leu Cys Gln Asn Pro Lys Leu Ala Leu Lys Asn Ser	
65                        70                                75                        80	

cca cct tat atc tta gac ctg cta cca gat acc tac cag cat ctc cgt		288
Pro Pro Tyr Ile Leu Asp Leu Leu Pro Asp Thr Tyr Gln His Leu Arg		
85 90 95		
act atc ttg tca aga tat gag ggg aag atg gag aca ctt gga gaa aat		336
Thr Ile Leu Ser Arg Tyr Glu Gly Lys Met Glu Thr Leu Gly Glu Asn		
100 105 110		
gag tat ttt agg gtg ttt atg gag aat ttg atg aag aaa act aag caa		384
Glu Tyr Phe Arg Val Phe Met Glu Asn Leu Met Lys Lys Thr Lys Gln		
115 120 125		
acc ata agc ctc ttc aag gag gga aaa gaa aga atg tat gag gag aat		432
Thr Ile Ser Leu Phe Lys Glu Gly Lys Glu Arg Met Tyr Glu Glu Asn		
130 135 140		
tct cag cct agg cga aac cta acc aaa ctg tcc ctc atc ttc agc cac		480
Ser Gln Pro Arg Arg Asn Leu Thr Lys Leu Ser Leu Ile Phe Ser His		
145 150 155 160		
atg ctg gca gaa cta aaa gga atc ttt cca agt gga ctc ttt cag gga		528
Met Leu Ala Glu Leu Lys Gly Ile Phe Pro Ser Gly Leu Phe Gln Gly		
165 170 175		
gac aca ttt cgg att act aaa gca gat gct gcg gaa ttt tgg aga aaa		576
Asp Thr Phe Arg Ile Thr Lys Ala Asp Ala Glu Phe Trp Arg Lys		
180 185 190		
gct ttt ggg gaa aag aca ata gtc cct tgg aag agc ttt cga cag gct		624
Ala Phe Gly Glu Lys Thr Ile Val Pro Trp Lys Ser Phe Arg Gln Ala		
195 200 205		
cta cat gaa gtg cat ccc atc agt tct ggg ctg gag gcc atg gct ctg		672
Leu His Glu Val His Pro Ile Ser Ser Gly Leu Glu Ala Met Ala Leu		
210 215 220		
aaa tcc act att gat ctg acc tgc aat gat tat att tcg gtt ttt gaa		720
Lys Ser Thr Ile Asp Leu Thr Cys Asn Asp Tyr Ile Ser Val Phe Glu		
225 230 235 240		
ttt gac atc ttt acc cga ctc ttt cag ccc tgg tcc tct ttg ctc agg		768
Phe Asp Ile Phe Thr Arg Leu Phe Gln Pro Trp Ser Ser Leu Leu Arg		
245 250 255		
aat tgg aac agc ctt gct gta act cat cct ggc tac atg gct ttt ttg		816
Asn Trp Asn Ser Leu Ala Val Thr His Pro Gly Tyr Met Ala Phe Leu		
260 265 270		
acg tat gac gaa gtg aaa gct cgg ctc cag aaa ttc att cac aaa cct		864
Thr Tyr Asp Glu Val Lys Ala Arg Leu Gln Lys Phe Ile His Lys Pro		
275 280 285		
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Gly Ser Tyr Ile Phe Arg Leu Ser Cys Thr Arg Leu Gly Gln Trp Ala		
290 295 300		
att ggg tat gtt act gct gat ggg aac att ctc cag aca atc cct cac		960
Ile Gly Tyr Val Thr Ala Asp Gly Asn Ile Leu Gln Thr Ile Pro His		
305 310 315 320		

aat aaa cct ctc ttc caa gca ctg att gat ggc ttc agg gaa ggc ttc Asn Lys Pro Leu Phe Gln Ala Leu Ile Asp Gly Phe Arg Glu Gly Phe 325 330 335	1008
tat ttg ttt cct gat gga cga aat cag aat cct gat ctg act ggc tta Tyr Leu Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu 340 345 350	1056
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gaa tta tac tgt gag atg ggc tcc aca ttc caa cta tgt aaa ata tgt Glu Leu Tyr Cys Glu Met Gly Ser Thr Phe Gln Leu Cys Lys Ile Cys 370 375 380	1152
gct gaa aat gat aag gat gta aag att gag ccc tgt gga cac ctc atg Ala Glu Asn Asp Lys Asp Val Lys Ile Glu Pro Cys Gly His Leu Met 385 390 395 400	1200
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gct tct gct ctt gga act gct tct aag gct gct tct ggc tcc ctt cat Ala Ser Ala Leu Gly Thr Ala Ser Lys Ala Ala Ser Gly Ser Leu His 515 520 525	1584
aaa gac aaa cca ttg cca gta cct ccc aca ctt cga gat ctt cca cca Lys Asp Lys Pro Leu Pro Val Pro Pro Thr Leu Arg Asp Leu Pro Pro 530 535 540	1632
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Gln Arg Arg Pro Leu Pro Cys Thr Pro Gly Asp Cys Pro Ser Arg Asp		
565	570	575
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Lys Leu Pro Pro Val Pro Ser Ser Arg Leu Gly Asp Ser Trp Leu Pro		
580	585	590
cgg cca atc ccc aaa gta cca gta tct gcc cca agt tcc agt gat ccc		1824
Arg Pro Ile Pro Lys Val Pro Val Ser Ala Pro Ser Ser Ser Asp Pro		
595	600	605
tgg aca gga aga gaa tta acc aac cgg cac tca ctt cca ttt tca ttg		1872
Trp Thr Gly Arg Glu Leu Thr Asn Arg His Ser Leu Pro Phe Ser Leu		
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Pro Ser Gln Met Glu Pro Arg Pro Asp Val Pro Arg Leu Gly Ser Thr		
625	630	635
640		
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Phe Ser Leu Asp Thr Ser Met Ser Met Asn Ser Ser Pro Leu Val Gly		
645	650	655
cca gag tgt gac cac ccc aaa atc aaa cct tcc tca tct gcc aat gcc		2016
Pro Glu Cys Asp His Pro Lys Ile Lys Pro Ser Ser Ser Ala Asn Ala		
660	665	670
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675	680	685
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Gly Glu Gln Cys Glu Gly Glu Asp Thr Glu Phe Met Thr Pro Ser		
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tcc agg cct cta cgg cct ttg gat aca tcc cag agt tca cga gca tgt		2160
Ser Arg Pro Leu Arg Pro Leu Asp Thr Ser Gln Ser Ser Arg Ala Cys		
705	710	715
720		
gat tgc gac cag cag att gat agc tgt acg ttt gaa gca atg tat aat		2208
Asp Cys Asp Gln Gln Ile Asp Ser Cys Thr Phe Glu Ala Met Tyr Asn		
725	730	735
att cag tcc cag gcg cca tct atc acc gag agc agc acc ttt ggt gaa		2256
Ile Gln Ser Gln Ala Pro Ser Ile Thr Glu Ser Ser Thr Phe Gly Glu		
740	745	750
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Gly Asn Leu Ala Ala Ala His Ala Asn Thr Gly Pro Glu Glu Ser Glu		
755	760	765
aat gag gat gat ggg ttt gat gtc cca aag cca cct gtg ccg gcc gtg		2352
Asn Glu Asp Asp Gly Phe Asp Val Pro Lys Pro Pro Val Pro Ala Val		
770	775	780
ctg gcc cgc cga act ctc tca gat atc tct aat gcc agc tcc tcc ttt		2400
Leu Ala Arg Arg Thr Leu Ser Asp Ile Ser Asn Ala Ser Ser Ser Phe		
785	790	795
800		
ggc tgg ttg tct ctg gat ggt gat cct aca aca aat gtc act gaa ggt		2448
Gly Trp Leu Ser Leu Asp Gly Asp Pro Thr Thr Asn Val Thr Glu Gly		

	805	810	815	
gag agg cct cca aaa cca ttc ccg cg <sup>g</sup> aga atc aac				2496
Glu Arg Pro Pro Lys Pro Phe Pro Arg Arg Ile Asn				
825		830		

tct gaa cg<sup>g</sup> aaa gct gg<sup>c</sup> agc t<sup>g</sup>t c<sup>a</sup>g c<sup>a</sup> ggt agt g<sup>g</sup>t c<sup>c</sup>t g<sup>c</sup>c g<sup>c</sup>c  
 Ser Glu Arg Lys Ala Gly Ser Cys Gln Gln Gly Ser Gly Pro Ala Ala  
 835 840 . 845

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tct gct gcc acc gcc tca cct cag ctc tcc agt gag atc gag aac ctc      2592
Ser Ala Ala Thr Ala Ser Pro Gln Leu Ser Ser Glu Ile Glu Asn Leu
850          855          860
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Met Ser Gln Gly Tyr Ser Tyr Gln Asp Ile Gln Lys Ala Leu Val Ile
865          870           .           875           .           880

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gcc cag aac aac atc gag atg gcc aaa aac atc ctc cg gaa ttt gtt      2688
Ala Gln Asn Asn Ile Glu Met Ala Lys Asn Ile Leu Arg Glu Phe Val
885          890          895

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900 905

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Phe Gln Pro His His His His His His Leu Ser Pro His Pro Pro  
35 40 45

Lys Val Val Arg Leu Cys Gln Asn Pro Lys Leu Ala Leu Lys Asn Ser  
65 70 75 80

Thr Ile Leu Ser Arg Tyr Glu Gly Lys Met Glu Thr Leu Gly Glu Asn  
..... 100 ..... 105 ..... 110

Glu Tyr Phe Arg Val Phe Met Glu Asn Leu Met Lys Lys Thr Lys Gln  
115 120 125

Thr Ile Ser Leu Phe Lys Glu Gly Lys Glu Arg Met Tyr Glu Glu Asn  
130 135 140

Ser Gln Pro Arg Arg Asn Leu Thr Lys Leu Ser Leu Ile Phe Ser His  
145 150 155 160

Met Leu Ala Glu Leu Lys Gly Ile Phe Pro Ser Gly Leu Phe Gln Gly  
165 170 175

Asp Thr Phe Arg Ile Thr Lys Ala Asp Ala Ala Glu Phe Trp Arg Lys  
180 185 190

Ala Phe Gly Glu Lys Thr Ile Val Pro Trp Lys Ser Phe Arg Gln Ala  
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Asn Lys Pro Leu Phe Gln Ala Leu Ile Asp Gly Phe Arg Glu Gly Phe  
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Tyr Leu Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu  
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Gly Asn Leu Ala Ala Ala His Ala Asn Thr Gly Pro Glu Glu Ser Glu  
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Asn Glu Asp Asp Gly Phe Asp Val Pro Lys Pro Pro Val Pro Ala Val  
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 Phe Gln Pro His His His His His His Leu Ser Pro His Pro Pro  
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Pro Pro Tyr Ile Leu Asp Leu Leu Pro Asp Thr Tyr Gln His Leu Arg  
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Thr Ile Leu Ser Arg Tyr Glu Gly Lys Met Glu Thr Leu Gly Glu Asn  
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Glu Tyr Phe Arg Val Phe Met Glu Asn Leu Met Lys Lys Thr Lys Gln  
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Ser Gln Pro Arg Arg Asn Leu Thr Lys Leu Ser Leu Ile Phe Ser His  
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Met Leu Ala Glu Leu Lys Gly Ile Phe Pro Ser Gly Leu Phe Gln Gly  
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Leu His Glu Val His Pro Ile Ser Ser Gly Leu Glu Ala Met Ala Leu  
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Lys Ser Thr Ile Asp Leu Thr Cys Asn Asp Tyr Ile Ser Val Phe Glu  
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Tyr Leu Phe Pro Asp Gly Arg Asn Gln Asn Pro Asp Leu Thr Gly Leu  
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Cys Glu Pro Thr Pro Gln Asp His Ile Lys Val Thr Gln Glu Gln Tyr  
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